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AFFILIATE ORGANIZATIONS:

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MCKC – MMV – MSM – MVG – OHG – PEG – RBX – SEMO – SPG.

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Missouri Speleological Survey

President's Message by Dan Lamping

A crawfish boil sounded like a fine idea when MSS Vice President, Krista Bartel suggested it for the group dinner at the Spring MSS Meeting, which was held on June 6 at Lake Ozarks State Park. The wise decision was then made to recruit Kirsten Alvey-Mudd to lead the meal prep along with help from Jessica Self and Lukus Shoffner in picking up and transporting the 80 lbs of live crustaceans, flown in from Louisiana. It was a first for me and a few others. Combined with shrimp, corn and Kirstin's homemade Polish sausage, it was a an excellent meal, befitting of good times with great people. Many thanks to Krista and Kirsten, along with Jessica and Lukus.

The main priority for holding the MSS meeting at Lake Ozarks State Park was to resurvey Ozark Caverns, a commerical tour cave operated within the state park. A previous map existed, created by Dwight Weaver and Paul Johnson in the 1960s, but it ended at the tour trail with notes indicating additional, low passage which continued that had never been mapped. The main priority of the weekend was to get the low passage mapped in the back of the cave, so that return trips could map larger, tourist trail later, making it more enticing to get volunteers to return. Two teams also started at the entrance and at the Angel Shower formation, arguably one of the most spectacular formations in all of Missouri. In total, we had 16 people who mapped all together, 2,700 ft of cave with 1,717 ft that was not on the original map. Matt Beeson is doing the cartography for the project and will organize future return trips to complete the mapping.

Both Friday and Saturday nights included good times around the campfire with plenty of space available for camping. Lake Ozarks State Park was very accomodating and reserved several sites in close proximity to one another for us to use and to have our meeting at the primitive McCubbins Point Campground. They also provided a shelter for us to use in case of rain, but it was a bit of a drive from the site, so we lucked out with the rain holding off, allowing us to have our meeting in the campground. Much appreciation to Lake Ozarks State Park for providing access to the cave and reserving space for us at the campground.

At the meeting, once we went through the traditional formalities and reports, we had a brief discussion on the possibility of changing the format of MSS meetings. Discussion centered around dropping



Cavers line up at the table for the crawfish boil.

down to two meetings per year and continuing to have roving meetings at different locations in accordance with cave projects. The hope is that we can make MSS meetings seem relevant enough to cavers and board members to get a decent turnout, rather than just the usual suspects. Also at the meeting, Dave Hoffman brought up an article he wrote in 1966, in *Volume 8 Number 3* of *Missouri Speleology* where he mused on the future of the MSS. At the time Dave offered a vision of the future, where in year 2000 (21 years now in the past) there would be a Missouri Speleological Survey headquarters in Rolla next to the Missouri Geological Survey. While this vision never came to fruition, Dave made the offer to potentially bequeath to the MSS 196 acres which he owns, outside of Rolla, as part of his will, which could possibly be used as a future headquarters site for the MSS, if that were a direction we wanted to go as an organization. Dave's offer is incredibly generous, but no doubt a big undertaking. A committee was formed to further communicate with Dave, and to evaluate the implications of such a transaction. The committee will later provide a report for the board to consider. It's beyond commendable to see someone like Dave Hoffman whose involvement with the MSS has spanned greater than five decades, and is still looking at ways to help support the goals of the organization.

A date was set for the next meeting to be held on September 19 at a site to be determined. The date was chosen because we have a small window of time to continue survey in Mary Lawson Cave in Laclede County. The fall meeting will be centered around this goal of getting a few crews into Mary Lawson as well as other possible cave trips. Look for more information in the coming month or two.

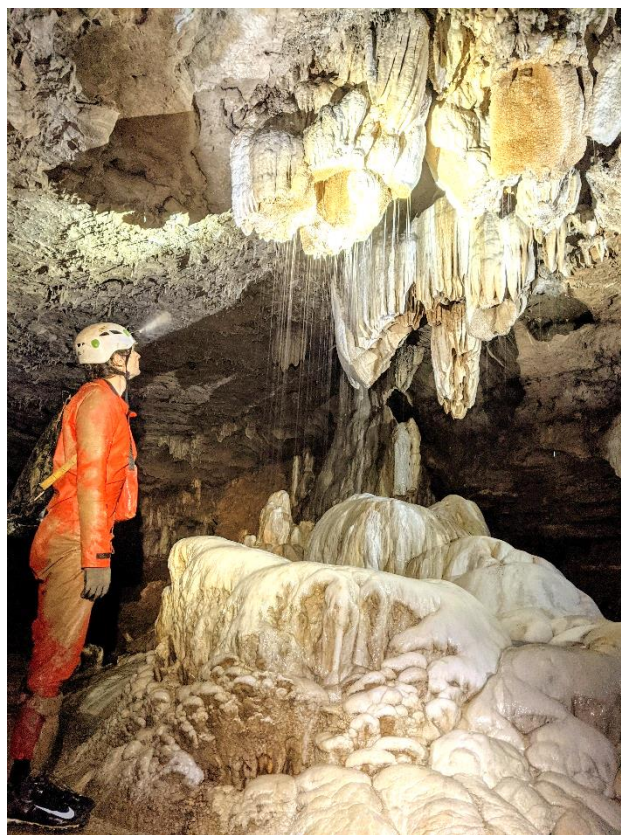


Left: Shawn Williams looks upstream to Seth Colston, pushing up a tight crawl beyond the tourist trail in Ozark Caverns.

- Photo by Dan Lamping

Right: Seth Colston admires the Angel Shower in Ozark Caverns after pushing far upstream.

- Photo by Dan Lamping



REMEMBERING BILL HEIM By Jonathan B. Beard, NSS 21408RL (CO-FE)

William Ray "Bill" Heim, a founding member of the Springfield Plateau Grotto, passed away May 11, 2021, after a sudden illness. He was a giant among men on more than one level and a really good friend. He was a much-admired, long-time fixture in caving in southwest Missouri from 1982 through 1987, then from 1998 until his passing at the age of 67. He was born and raised in Lamar, Missouri along with a handful of siblings, Kathy, Tom, George, Helen and Grace.

In that span of time caving, Bill made many caving friends, many of whom remained long-time friends. It was easy to be friends with Bill—he was very likeable, easy-going. Little or nothing ever seemed to upset him.

Bill's source of income was general construction, focusing as a finish contractor—the guy who puts in windows, doors, roof fascia, things like that. He was self-employed since 1979, a year after he moved to Springfield.

Bill was married twice, to Julie Heim, and for his last 14 years to Bonnie (Howard). Jandy was Julie's daughter, and Bill was happy to be her step-dad for several years. He had a step-daughter, Andrea, and step-grandsons Brody (7) and Levi (4) by way of Bonnie. His step-grandsons called him "Poppy Bill" and loved going on walks, riding on Bill's shoulders, and playing with him. Bill loved going to North Carolina to see his "grand-boys."

SOME OF BILL'S MANY CONTRIBUTIONS TO CAVING: On paper through the years, Bill had paid memberships in Heart of the Ozarks Grotto (HOG), Ozark Highlands Grotto (OHG), Springfield Plateau Grotto (SPG), the Missouri Speleological Survey (MSS), the Missouri Caves and Karst Conservancy (MCKC) and the National Speleological Society (NSS #50877FE). He served as MSS Director for HOG and later OHG, the latter from 2008 to 2021. He served on the MCKC Board of Directors for about 20 years. He co-managed Dream Cave of Ozark Co. and Crystal Caverns of Barry Co. for several years on behalf of the MCKC. More than once, he replaced or repaired the entrance door to Crystal Caverns, and it was Bill's phone number that was on the cave entrance sign for people to call if they wanted to see the cave.

Bill assisted in the survey of several caves in southwest Missouri including major cave mapping projects such as Breakdown Cave, Breezeway Cave and Garrison Cave #2 of Christian Co., Crighton Natural Bridge and Hall Branch Cave in Greene Co., Berry Cave of Pulaski Co., Pittman Cave of Laclede Co., Sarcoxie Cave of Jasper Co., Ash Cave of Barry Co., Steins Creek Cave, Lowell Cave and China Pig Hole of Wright Co. He also contributed to the mapping of several smaller caves.

Bill participated in the graffiti and trash removal in a number of caves including Giboney Cave, Devils Slide Cave and Sequiota Cave of Greene Co., Wilson Cave of Lawrence Co., Jolly Cave of Jasper Co. and Fisher Cave of Meramec State Park in Franklin Co.

Bill helped with public outreach education field trips and displays to teach students about cave resources and their conservation off and on throughout his caving "career."

Bill helped build a number of cave gates that include Breakdown Cave, Fitzpatrick Cave and Garrison Cave #2 of Christian Co., Round Spring Cavern of Shannon Co., Lon Odell Memorial Cave of Dade Co. These gates protect endangered species habitats as well as delicate cave formations from unauthorized human disturbances and vandalism.

AWARDS: Bill received the Lester B. Dill Award in 2015, an award presented most years to an outstanding caver in the Mississippi Valley-Ozark Region of the NSS. Three years later, in 2018, Bill was recognized as a Fellow of the Society by the National Speleological Society, joining the ranks of a select few cavers in southwest Missouri to receive such an award.

A FAMILIAR PRESENCE: Bill was an often-seen face at OHG and SPG grotto meetings, MSS meetings, MCKC meetings as well as his attendance in many MVOR gatherings. He was especially conversational around campfires, and the "after-the-meeting" gatherings at restaurants following grotto business meetings. He was known, by those who knew him well, as the "gentle giant," in reference to his height of six-ft, seven-in. and his friendly, laid back, peaceful disposition. Often, he was quiet and listened to others' stories, but he would share his own stories as well. He had a great sense of humor.

There are many cave-related stories involving Bill, more than can be written in this tribute. Those that I remember best are included below.

DIDN'T WE LIVE NOT TOGETHER AT THE SAME PLACE? When I moved to Springfield from Kansas in 1978, my first residence was an efficiency apartment located at 919 S. Jefferson, Apt. #6 where I lived from June to August. Four years later, I met Bill for the first time at an OHG business meeting. As we got to talking about ourselves, I found out that he had moved from Lamar, Missouri to Springfield in 1978. I asked him what month, and he said what month it was. I asked him where he lived at first, and he said it was a small efficiency apartment on South Jefferson. What was his address? 919 S. Jefferson, Apt. 6. We laughed when I explained I

had lived there, moving out just before he moved in. We wouldn't meet for another four years. Living in the same apartment not together!

SOME SAY CAVING IS FOR SHORTER PEOPLE – SAVING THE FAMILY JEWELS. During an MVOR cave trip in Illinois Caverns, Bill and I trekked through the cave together. At a side passage, a few cavers were wading up to their chests in deep water between rimstone dams. Bill studied the walls above the deep pool and decided to opt out of getting wet because, as he put it, "I don't want to get my family jewels wet and cold." He chimneyed up the walls, then with his shoulders on one ledge and his heels on the opposite ledge, he shimmed across, ten feet above the pool, chimneyed down and stayed dry—to the amazement of shorter onlookers who had no chance of duplicating his technique!

"WORLD'S TALLEST MIDGET" CARDS. For many years, Bill carried "business" cards that he would hand out to people who asked about his height or joked about it. I joked about it soon after we met. He promptly handed me a card. I carried that card in my wallet for many years until it simply got so old, it disintegrated. Too bad; I was never able to obtain a replacement card.

**William R. Heim
World's Tallest Midget
201 Centimeters (5 feet, 19 inches)
Yes, the weather is fine up here.
No, I don't play basketball.**

RIDING THE STORM OUT. I was riding in Bill's truck to Crystal Caverns of Barry Co., a cave we co-managed for the MCKC, to guide some people through the cave. On the way, we drove through a very vicious storm—parts of trees and sheet metal were flying across the highway in front of us, through the air along with nearly blinding rain. The wind buffeted the heavy truck, a smaller, lighter vehicle may have been blown away. However, Bill kept the truck on the road. We would later learn we had driven through a "land hurricane" known as a derecho. I had never heard of a derecho before. Look it up! Those are nasty!

CHANGE THE FOCUS! After helping other local cavers to host the MCKC Board of Directors meeting, Bill and Bonnie Heim and I led Board members Craig Williams, Susie Jansen and Bill Kacerovskis to two caves, one badly vandalized for more than 100 years (Fitzpatrick Cave) and another restored (Breakdown Cave). The group was shown the "ugly" cave first—trash, graffiti, broken speleothems. But wait! In a pool were bristly cave crayfish and, to everyone's surprise, an Ozark cavefish! That changed everything! Breakdown Cave was also seen. However, the sighting of an Ozark cavefish meant Fitzpatrick Cave needed protection as it is an endangered species habitat. Subsequently, the cave was gated (and prehistoric artifacts were also found in the cave). Since then, efforts have been made to restore Fitzpatrick Cave.

SKIPPING STEPS AT CHINA PIG HOLE. Perhaps one of the oddest cave names—China Pig Hole! The cave is entered through a large diameter 49-ft. entrance pit in the woods of Wright Co. During the survey of the cave, we were using a 66-ft. belayed cable ladder to access and exit the cave as not everyone had vertical training or equipment. The rungs of the ladder were 15-inches apart, and some of us shorter people (e.g., less than six feet tall) were complaining the rungs were too far apart! Not for Bill! Bill was complaining they were too closely spaced and was using every other rung, skipping all the nuisance "extra" rungs! He then claimed, because he stepped on fewer rungs, that the pit was not as deep for him as it was for the rest of us!

MAPPING "THE CANAL" AND THE FIRST TO SEE THE "CRYSTAL BOWL" AND "BILL'S CANYON." The longest one-day survey numbers of 4.8-mile Garrison Cave #2 occurred when Bill and I mapped "The Canal" section of North Creek. We surveyed over 900 feet on that day. Normally, I am a slow sketcher, and most survey shots can be short due to the twists and turns of cave passages. However, North Creek is a long, relatively straight passage, almost wall-to-wall water with a flat, horizontal ceiling. So, Bill stretched the survey tape several 100-ft. long shots, and I had an easy time sketching the walls and not much else. It would be the most productive day I ever had mapping that cave. Bill was the first one to ever see the Crystal Bowl, a most beautiful rimstone feature with thin, translucent walls and a floor of calcite crystal growths. He was exploring the various side passages in an area while I was slowly sketching breakdown blocks and such on my sketch. He had time to kill if I was sketching for sure! He also was the first person to see what would eventually be known as Bill's Canyon, a side passage way up North Creek that has up to 30-ft. ceilings, the tallest passage in the entire cave.

GYPSUM FLOWERS IN A SANDSTONE SHELTER?! Two October days in 1987 and 1988, Bill led me to some sandstone shelters not far from his boyhood home of Lamar. They were undocumented, despite their impressive sizes. The largest of them, Morris Shelter, has an entrance about 200 ft. wide and 20 ft. tall, and is deep (long) enough to have a legitimate “dark zone.” Bill and I mapped it one day, and while I was sketching the details near the entrance, Bill was exploring the nether regions. “Hey, Jon, I think I found some aragonite crystals on the ceiling back here.” I thought, “What? Aragonite in a sandstone shelter?!” I walked back where Bill was and looked up. Gypsum flowers! “Gypsum flowers?! What are gypsum flowers doing in a sandstone shelter?!” I took pictures. Jerry Vineyard would later explain how they formed in a sandstone shelter, but they’re still very unusual.

THE THREE AMIGOS. On June 12th of 2009, the MCKC Board of Directors had their business meeting in the Springfield area, and then we took them to Cielito Lindo’s, a popular Mexican restaurant. At that time, the outside of the restaurant was painted a set of murals of Mexican culture, one of which was a flamenco dancer next to a bench next to palm trees. On a whim, I sat against the wall mural right at the bench painting, pretending to be sitting on a real bench. Bill “sat” next to me, and on the other side, C.A.I.R.N. president Craig Williams. We thought of ourselves as the “Three Amigos.”



Bill (right) with Craig Williams (left) and Jon Beard (center) “sitting” on a mural painting bench at a Mexican restaurant.

Missouri Speleological Survey Files Report for July 1st, 2021. If you have **new information** on any Missouri caves, my email address is slagrush@gmail.com. We need your help to improve the database and make it more complete. I can and do work with Facebook entries, but for information or photos to be incorporated I need to be “private messaged” with the cave name and county. **Solny Adalsteinsson sent:** - Almost 60 faunal records for a possible Indiana Bat-mine in St. Louis Co. **Matt Beeson sent:** -3 “Trip Reports” to Scott House, but I was able to grab some information on 2 caves in Ozark Co.: Lost Lake and Crooked Branch Caves. Last report period, Beeson had sent the new map of Lost Lake, while the map of Crooked Branch is being prepared by another cartographer. **Mark Brooks sent:** -8 photos and a trip report for survey work in the Moore Cave System. **Seth Colston sent:** -An email with his report on Geronimo Spring survey along with links to Bill Gee’s 3 videos of the cave. I was also able to capture Gee’s notes that he added to the video. **Jim Cooley sent:** -12 Faunal Records, 6 Monitoring Forms and a report on a cave, 3 caves in Barry, 2 caves in Shannon and one in Benton Counties. **Adam Gerdes sent:** -Information on a possible shelter in Warren Co. that will need a follow up trip to verify depth of penetration. **Ken Grush sent:** -More corrections/additions to the Jefferson Co. records. In particular, I’ve added reports for first “reporter” using the “cave catalogs,” starting with a 1947 report and “ending” with the 1976 Catalog. There are “other” catalogs that are computer printouts after 1976, that I may use later to capture that “first reported date,” just a good reference starting point. By comparison, J Harlen Bretz reported some 400-500 caves (Vineyard said it was 437), but the database reflects 558 caves with reports that pre-date Bretz. -2 new cave records, filling in most of the Main Table for these Franklin Co. caves: Arrowhead Cave and Cedar Cave. Much in line with other St. Peter Sandstone shelters, these had large entrances, but more penetration/depth behind the dripline, with 142 and 50 ft lengths behind the dripline. One could argue that Cedar is only a shelter (wider than “deep”), but both names are from a landowner preference. -5 GPS locations for caves in Crawford Co. under the MDC permit. Each have 3D models of them now and 4 have “cover” photos in the database now! -Reports added directly to the database for 2 Camden Co. Caves: Buzzard Perch and Travertine Spring Cave. 3D models were scanned for each cave. About 10 faunal records added including the eponymous Buzzards, four of them! -Adjustments to the database for Spring and Crescent Shelters for Jefferson Co. There “was” a lot of confusion in the database but a survey at the “supposed” Crescent Shelter location matched Spring Shelter instead. Strangely there is a third shelter in

the area that has a map with its own name on it that looks exactly like Spring too, but it does have a second map that looks very different! Maybe more of this confusion will go away with another willing landowner.

-Processing of 116 new entrance photos. The entrance photos that we place in the database are a “mere” thumbnail of about 17k...so these photos require selection, then reduction in size and placement in database. The Ben Miller collection was very helpful, large groups of photos (on 120 caves) from which less than 10% (1600 photos) were selected for entrance photos. It is a process and was spread over 5 days to complete. Likewise, the Mark Jones collection had to be processed, but the database benefited from the many new entrance photos collected. **Ryan Hoffman sent:** -A lead for Dade Co., thought to be a known cave but was instead new to the database. We’re still waiting on more details. **Scott House sent:** -An audit (and addition) of almost 600 “caves,” including 6 new leads. Mostly, changes were made to agency properties like MTNF, ONSR, MDC, DNR; and included adding geologic formations or ages, ownership, standardized abbreviations, quad/field indicators, outdated agent’s names, regional office designations, etc. **Mark Jones sent:** -Over 1000 photos from 52 caves that he visited over the past 12 months. Mark also pulls together a PowerPoint presentation of the photos from a trip to a cave; he sent about 360 of these photo-essays going as far back as 2013, basically covering his “return” to Missouri caving; he was caving with the Mark Twain Grotto back in the 1990s and then apparently took a break. -15 “Trip Reports”, 38 Use Monitoring forms, 40 cave descriptions and 167 Fauna Records for a week’s work from the Winona facility handling joint operations of the MTNF and ONSR. Most work was done in Shannon, followed by Carter Co. **Steve Kaub sent:** -7 photos of a recent MVG cave trip. **Mark Leach sent:** -Confirmation of cave location with existing location and provided 2 photos, one of which is now the “cover” photo for database. **Joe Light sent:** -City of St. Louis land plat showing a “conduit” to a sinkhole. If it takes that much water, perchance there is a cave there? Well, at least a lead. -Sent a collection of photos of the display of Fisher Cave in Meramec State Park, nice to have for the archives. He also sent a report on Indian Cave while he was in the park; including photos and GPS. -An interesting land plat for the City of St. Louis that displayed locations for both Cherokee and English (Benton Park) Caves. Cherokee Cave is still accessible but English Cave has not been entered by anyone, well other than a camera in a long time!! -A copy of his article in the NSS News about English Cave in St. Louis City; published in the March issue of the News. **Alex Litsch sent:** -7 photos of Talus Cave and Pointed boulder Cave in Ste. Genevieve Co. He also had 2 new Faunal Records for Talus Cave. -Information to fill out the Main Table for a new cave in Ste. Genevieve Co.: Chub’s Cave. Later he sent a new map of the cave. -5 Faunal records for Coon Cave in Jefferson Co.; Litsch surveyed 400 ft of cave so far, which was estimated to be 100 ft long! **Chad McCain sent:** -A report on his survey trip to Carroll Cave in Camden Co. The state’s third longest cave got a little longer. -2 forwarded emails describing “historic” rescues in Perry Co. at Crevice Cave, one from the Echo Pit entrance. -A survey “trip report” for Berome Moore Cave in Perry Co., currently at 23.68 miles “or so.” **Ben Miller sent:** -A map of Lookout Pit (CL-79, CD-28) in Stone Co. -Over 120 “cave-named” folders, each of a different cave, with over 1600 photos he (and Chris Gertson) took, mostly on caves that he had already submitted maps of. There was a bounty of 116 new entrance photos added to the database plus an archive of photos to further document these caves, plus 4 Faunal records of Grotto Salamander. **Rhonda Rimer sent:** -2 reports on McCafferty Hollow Cave in Stone Co. which contained directions, descriptions and 11 Faunal Records. **Tyler Skaggs sent:** -A nice entrance shot of Skylight Natural Bridge in Camden Co.; interesting feature that has 4 entrances to its 110 ft length! **Eric Sutterlin sent:** -Sent a final map of Rocky Digs Cave (CL=2126) in Jefferson Co. **Mick Sutton sent:** -A brief description and a bio-summary for Bills Hollow Shelter. -4 Monitoring Forms for caves on a CRF trip in Shannon Co.: Island Branch, Stacked Slabs, Possum Trot Hollow and Grapevine Caves. -18 historic “trip reports” for 12 caves including caves in Iron, Marion, Reynolds, Oregon, Perry, Pulaski and Shannon Counties spanning years between 1983 and 1996. -2 reports that covered a number of fields in the Main Table of the database for Devils Backbone, Oure and Dawes Caves, in Oregon, Washington and Crawford Counties respectively. -21 “new” faunal records from old historic records going back to 1985 for many of them. -Another volley of historical reports and Main Table entries for 12 caves in Reynolds, Oregon, Texas and Washington Counties. -4 more reports for 5 caves scattered across the state: Tarpit Hollow, Still Spring, Spout Spring and Annex, and Onondaga Caves. -A number of modified maps with minor changes, corrections and additions. - More additions to Biology and Related Record fields of the database: 2 trip descriptions and 2 biology

summaries for 4 different caves across the state. -A dozen more bio-summaries for the database; these were focused on Christian Co. MTNF. -A week later another dozen bio-summaries; these too were focused on Christian Co. MTNF. With this group, he sent 6 “historic” reports from 1984-1985, scattered across the state. - Historic reports on 10 different caves in Douglas, Howell and Shannon Counties. And another group of over 20 bio-summaries on caves in Christian and Taney Counties. **Jim Zollweg sent:** -A map of Misery Caverns from 1972 (CL345 ft), as you can imagine pure “misery.” So only 49 years late, but we’re happy to spare others the misery. Mark Clemens, one of the original survey party, had a framed copy...the only copy remaining...until today. — Ken Grush

Kansas City Area Grotto (KCAG). May 2nd - Jim Cooley and Julie Cottrell monitored Flippen Cave in Benton Co., MO., which is managed for the landowner by Missouri Cave and Karst Conservancy (MCKC). This cave was gated in 2010 by KCAG, MCKC, and the Missouri Department of Conservation (MDC). The gate has since been breached once and repaired. Cooley and Cottrell verified the gate was still intact, maintained the lock, did critter counts, and visited with the cave owners, on whose property they were also turkey hunting. **June 12th** - Bill Gee led a trip including Seth Colston, Kristen Godfrey, Martin Carmichael (Chouteau Grotto), Vincent Munson, and Kohl Mitchell. The team surveyed around a very low and tight room off the east side of the Grand Canyon area. More work will be required to finish the sketching. Some years ago, KCAG did a trip which attempted to connect the Rugged Canyon and Grand Canyon. This room was the primary focus from the Grand Canyon side. **June 13th** - Colston led an eight-hour trip consisting of Gee and Godfrey into Geronimo Springs Cave. The objectives were to continue survey of main passage after the watercrawl, and to take video of the watercrawl and other features of the cave. After traversing the large, low watercrawl into the cave, everyone changed into dry clothes. About 400 ft. of survey stations were shot and recorded, and sketching was done, doubling the amount of surveyed cave to 800 ft., with many hundreds of feet still to survey. Then, Gee took some footage of the waterfall. Colston sketched the plan view and Gee sketched profiles as well as cross sections. As Colston finished the plan view, Godfrey and Gee started instruments and took data. Lunch break was at 12:30. During the afternoon, Colston and Gee finished the first room sketches. Then Godfrey and Gee took some more data in the second room leading to the waterfall. Gee led everyone out while taking another video. **June 19th - 20th** - Cooley, Colston and Cottrell accompanied Vona Kuczynska, a U.S. Fish and Wildlife Service bat biologist, to Toby Cave in Camden County for census of this very large gray bat maternity colony using Thermal Infra-Red videography. **June 21th - 22nd** - Cooley and Cottrell accompanied Jordan Meyer, MDC bat biologist, to Bat Cave Oregon Co., where another very large gray bat maternity colony was censused using Thermal Infra-Red videography. Cooley ran a hand-line up the bluff to assist in accessing the cave entrances. We also verified that this gate was intact, and oiled the lock. **June 23rd** - Cooley and Cottrell conducted a visual census of bats exiting Turner Spring Cave, in Oregon Co., for the USFWS and Mark Twain National Forest (MTNF), while verifying that the gate on this cave was intact. **June 25th** - Cooley and Cottrell did an exterior gate check and oiled the lock on Onyx Cave in Pulaski Co. **June 26th** - Colston led a KCAG novice trip to Skaggs Cave, consisting of Martin Carmichael (Chouteau Grotto), Nathan Taylor and his two sons, and Shawn Paxton, followed by a grotto-supplied meal of smoked pulled pork. -- Jim Cooley

Springfield Plateau Grotto (SPG). **May 1st**—Jon Beard and Treavor Bussard continued the survey of Rockspan Cave (formerly Natural Bridge Cave #1 and #2, Greene Co) by officially joining two caves by survey (even Jon could squeeze through!). Then the survey shifted to a passage that was unnoticed in the 1973 surveys of the cave system. The survey was aborted after a few shots due to two skunks that occupied the passage. Skunks 1, Surveyors 0. **May 3rd - 4th**—Max White, Matt Bumgardner and Jon Beard continued work on repair and maintenance on the siphon system for Garrison Cave #2 (Christian Co), getting it primed for an upcoming trip to the nether regions of the cave. The siphon system was significantly damaged by major flooding since the last trip to the system. **May 8th**—Charley Young, Max White, Kayla Sapkota, Dillon Freiburger, Riannon Colton, Zachary, Nathan and Jacob Burton and Jon Beard visited the Main Room, Armpit Avenue, North Loop, Lower-Level Maze Loop, Third Level, Formation Loop of Breakdown Cave (Christian Co) before visiting next door neighbor Fitzpatrick Cave to view complete and ongoing restoration areas. High water

levels prevented the group from visiting the Southeast Passage and Canopy Avenue of Breakdown Cave. **May 25th**—Jon Beard presented a program to second grade students at Fordland (Missouri) Elementary School on cave critters and answered many questions before leaving them with copies of *Caring for Your Karst* to share with their families. **June 5th**—Jon Beard presented a program on the survey of Fantastic Caverns to 100 members of the Tandem Rally, a Midwest group of tandem bicyclists who had earlier seen the cave. SPG received a monetary donation. **June 8th**—Trenton Wells, Matt Bumgardner and Jon Beard guided a group of Arkansas high school students in a workshop on cave surveying and cave restoration. Also participating was a USFS employee. The group was led to the Cane Bluff Caves (Taney Co), a group of mostly short crawlway caves where the students were taught the basics of cave mapping in two short stretches of narrow cave passage. After this, the students searched for trash and graffiti, finding some of each. Cave fauna was also sought and recorded. **June 9th**—Using Ben Miller’s preliminary map, Jon and Alicia Beard marked the lithology inside Talking Rocks Cavern (Stone Co) and obtained GPS readings on the surface to help geo-reference the cave map. While there, owner Bruce Herschend and Jon spent a half hour “talking rocks.” (Alicia’s pun!) **June 11th**-- Bethany Bruman, Matt Bumgardner and Max White visit Garrison Cave #2 to reprime the siphon system and lower the water level for the upcoming June 14th trip. A big brown bat was seen in the entrance passage. **June 12th**--Max White visited Garrison Cave #2 and shut off the Siphon. Six Bristly Cave Crayfish were seen and 1 salamander. **June 13th**--Max White visited Garrison Cave #2 to check the water level for the June 14th trip. Seven Bristly Cave Crayfish were seen. **June 14th**-- Jon Beard, Emily Roberts, Seth Colton, Nathan, Zachary and Jacob Burton, Matt Beeson and Max White recorded biology and took photos in Garrison Cave #2 (Christian Co) up to Three Rivers (6,000 feet of main passage). Due to relatively high-water levels, only 17 Bristly Cave Crayfish were seen, also six cave salamanders, caecidotea isopods, diplurans were seen. This is the current longest surveyed cave in SW Missouri (10th longest in the state). **June 19th**—Trenton Wells and Treavor Bussard surveyed a few hundred feet of crawlway in Rockspan Cave (Greene Co). The passage is a continuation of that surveyed in May. While they were doing that, Jon Beard surveyed environs on the surface, including the tying in of the entrances to Rockspan Cave and the resurgence to the east. While in the back end of the cave, Trenton and Treavor found two Bristly Cave Crayfish and one Ozark Cavefish. The cave complex was formerly known as Natural Bridge Cave #1 and Natural Bridge Cave #2, but have been connected by survey and renamed by the owners who are developing the area as a karst education center. --Materials provided by Jonathan Beard. Report by Max White

MSS MINUTES. The Spring 2021 Board meeting of the Missouri Speleological Survey was called to order by President Dan Lamping on June 6th, at the McCubbins Campground, Lake Ozarks State Park. **Introduction of Officers:** Dan Lamping, President; Krista Bartel, Vice-President; Alberta Zumwalt, Secretary. Absent - Don Dunham, Treasurer. **Roll Call of Directors:** Craig Williams, CAIRN; Rita Worden, Chouteau; Seth Colston (proxy for Jim Cooley), KCAG; Gary Zumwalt, LOG; Matt O’Neal (proxy for Alex Litsch), MVG; Chad McCain (proxy for Alicia Wallace), MCKC; Jessica Self, MSM; Lorin O’Daniell, PEG; Max White, SPG; Scott House (proxy for Gary Resch), SEMO. Absent were: CCC, Daedalus, LEG, RBX, MMV, and OHG (vacant). **Secretary’s report.** The minutes of the Fall 2020 meeting were emailed to the Officers and Directors, and printed in the September-October 2020 *MSS Liaison*. **MSS Liaison.** Gary Zumwalt reported cash on hand of \$234.13; Sending out 34 paper copies and the rest as electronic copies, the next deadline is July 1st. **Treasurer’s Report.** Don Dunham had sent out the report electronically before the meeting and copies were distributed at the meeting. **REPORT OF THE TREASURER – May 31, 2020 – ACCOUNTS:** General fund \$10,387.80; Subscriptions/Donations *Missouri Speleology* \$11,315.27; Research Fund \$9,284.78; Anne Johnson Data Fund \$18,154.77. Affiliation fees \$827.00; Subscriptions *Liaison* \$391.00; Total \$50,360.62. **ASSETS:** Savings bonds \$2,000.00; Interest checking \$12,360.62; Certificates of deposit \$36,000.00; Total \$50,360.62. **Missouri Speleology.** Pres. Lamping said Vol. 63 is now printed and available: *Caves of the Butler Hollow Mining District*. Scott House said he is working on Island Branch, Shannon Co. **Old Business** – none. **New Business. Research Council** – Pres. Lamping reappointed Mick Sutton and Bob Lerch to the council for another 3 years. **Discussion on MSS meetings** – Pres. Lamping said there had been a meeting to discuss the locations and numbers of future meetings. The MSS bylaws say: A. *There shall be a minimum of three*

meetings per year, in the Fall, Winter, and Spring at specific dates specified by Board action. B. Special meetings may be called by the President with at least 30 days advance notice to all Board members. Discussion on going to 2 meetings per year, held in the Spring and Fall so they could also be project days. Scott House made a motion to put forward an amendment to the bylaws with intent to change the bylaws to 2 meetings. Seconded by Rita Worden. Passed. Pres. Lamping said that he, Krista & Scott would work on the amendment. It would then have to be presented in writing to the Board at least 45 days prior to the meeting and have been presented to each affiliated organization by their MSS Director. To amend the bylaws, it needs a majority vote of the board. **Property proposal.** Dave Hoffman has 196 acres of land about five miles out of Rolla and wanted to know if the MSS wanted a headquarters. After much discussion, Matt O'Neal made a motion to check out the possibilities. Seconded by Chad McCain. Pres. Lamping said that he, Max White, Krista Bartel & Jessica Self would check into it. There was a suggestion that an MSS meeting could be held there. **Cave Files.** Scott House reported a lot of information coming in. He stressed that anyone going on a trip should turn in faunal reports to Ken Grush. He said it is very important since organizations like MDC come to them for information. **Agency reports. Mark Twain National Forest** – Scott House said that they subsidized the new volume 63 of *Missouri Speleology*. **Ozark Scenic Riverways** – Scott House said many trips are being led in the Riverways and need people to help. **MDC** – Pres. Lamping reported lots of stuff to fill out so it takes time to get permits. With Shelley Colatskie as a contact, it may help. **State Parks** – Scott reported mapping Ozark Caverns netted 2700 ft., including the rear portion. The only part left is part of the tour trail. **City of Perryville.** Pres. Lamping said that he and Scott made 4 large interpretive signs; Also 2-3 put up by LAD Foundation. Scott said they want to have a daylong event in Perryville – show & tell only – no cave trips. **Affiliate Organizations Project Reports. CCC** – Pres. Lamping reported ongoing survey trips. Rita Worden is planting trees on the property. **Berome Moore** – Chad McCain reported that Mark Brooks came up from Arkansas and was able to get under flowstone which was thought to be impassable. Survey total is 23.6 miles with 16.2 miles re-surveyed in the last 10 years. Historical length is 18 miles. Chad announced remapping of Tom Moore section on July 17th – bring your own water. **Public Outreach** – Pres. Lamping said things can be put on Facebook. He will add that a new MoSpeleo is available. On the website – he puts MSS Liaison. Don Dunham sells a lot of inventory on the website. The Cherokee Cave issue sells more than any of the rest. **Next Meeting.** Scott House asked how far Bennett Springs was from Mary Lawson Cave. Since there are only two weeks allowed to survey in Mary Lawson Cave, the meeting could be held in that area to allow for work to be done. Scott House made a motion the Fall meeting be held on Sept. 19th – site of the meeting to be determined later. Seconded by Lorin O'Daniell. Meeting adjourned. –Respectfully submitted, Alberta Zumwalt, Secretary

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Research committee -Dr. Robert Lerch, Dr. Michael Sutton, Dr. Doug Gouzie and Jeffrey Crews.

Cave Files Committee: Scott House (Chairman), Ken Grush, Mick Sutton, Dan Lamping, and Jeffrey (Spike) Crews.

Calendar:

Sept. 1st – Next MSS Liaison deadline.

Sept. 19th – Fall MSS Meeting, 10 am, location to be set, probably in the area of Mary Lawson Cave, LaClede Co. where work projects could be done.

Attention: The MSS affiliate fees were due in January. There are still some organizations that have not paid their fee: MVG, MSM & Roubidoux. Please send a check or money order for \$25.00 to the MSS Treasurer, Don Dunham, 147 Ron de Lee, Arnold, MO 63010. If you have just recently paid the fee, please disregard. To contact Don - email: don_g_dunham@yahoo.com or call: 402-203-3191